

AMENDMENTS TO THE CLAIMS:

Please amend claims 1 to 3, 6, 8, 10 and 12, add new claims 17 and 18, and cancel claims 4, 5, 9 and 15 as set forth below. The claim listing below replaces all prior versions of the claims in the application.

1. (Currently Amended) An engine exhaust emission purification apparatus comprising:
a reduction catalytic converter disposed in an engine exhaust system to reduce and purify nitrogen oxides by using a liquid reducing agent;
an injection nozzle that supplies by injection the liquid reducing agent to a flow of an exhaust emission upstream from the reduction catalytic converter; and
a nozzle temperature detecting device for detecting a nozzle temperature of the injection nozzle;
a temperature maintenance device for maintaining a temperature of at least a part of a liquid reducing agent supply system including the injection nozzle and piping of the injection nozzle at a temperature lower than a boiling point of a solvent of the liquid reducing agent or equal to or higher than a melting point of dissolved matter, wherein the temperature maintenance device is arranged to route a conduit of engine coolant to a flange for attaching the injection nozzle to the exhaust system to thereby cause heat exchange between the flange and the engine coolant; and
a circulation control device for controlling circulation or interception of the engine coolant in the conduit based on the nozzle temperature detected by the nozzle temperature detecting device.
2. (Currently Amended) The engine exhaust emission purification apparatus according to claim 1, wherein the temperature maintenance device comprises is ~~configured by~~ a heat insulating member disposed between the exhaust system and [[a]] the flange for attaching the injection nozzle to the exhaust system.
3. (Currently Amended) The engine exhaust emission purification apparatus according to claim 1, wherein the temperature maintenance device comprises is ~~configured by~~ radiating fins

provided to be juxtaposed to [[a]] the flange for attaching the injection nozzle to the exhaust system.

4 and 5. (Cancelled)

6. (Currently Amended) The engine exhaust emission purification apparatus according to claim 1 [[5]], wherein the circulation control device circulates the engine coolant when the nozzle temperature is equal to or higher than the boiling point of the solvent of the liquid reducing agent or lower than the melting point of the dissolved matter.

7. (Original) The engine exhaust emission purification apparatus according to claim 6, further comprising a coolant temperature detecting device that detects a coolant temperature of the engine coolant,

wherein the circulation control device prohibits a circulative flow of the engine coolant when the coolant temperature detected by the coolant temperature detecting device is equal to or higher than the boiling point of the solvent of the liquid reducing agent.

8. (Currently Amended) An engine exhaust emission purification apparatus comprising:
a reduction catalytic converter disposed in an engine exhaust system to reduce and purify
nitrogen oxides by using a liquid reducing agent;
an injection nozzle that supplies by injection the liquid reducing agent to a flow of an
exhaust emission upstream from the reduction catalytic converter;
a nozzle temperature detecting device for detecting a temperature of the nozzle of the
injection nozzle;
a temperature maintenance device for maintaining a temperature of at least a part of a
liquid reducing agent supply system including the injection nozzle and piping of the injection
nozzle at a temperature lower than a boiling point of a solvent of the liquid reducing agent or
equal to or higher than a melting point of dissolved matter The engine exhaust emission
purification apparatus according to claim 1, wherein the temperature maintenance device is
arranged to lead a conduit for the engine coolant to at least a part of the liquid reducing agent

supply system to thereby cause heat exchange between the liquid reducing agent supply system and the engine coolant; and

a circulation control device for controlling circulation or interception of the engine coolant in the conduit, based on the temperature of the nozzle detected by the nozzle temperature detecting device.

9. (Cancelled)

10. (Currently Amended) The engine exhaust emission purification apparatus according to claim 8 [[9]], wherein the circulation control device circulates the engine coolant when the temperature of the nozzle is equal to or higher than the boiling point of the solvent of the liquid reducing agent or lower than the melting point of the dissolved matter.

11. (Original) The engine exhaust emission purification apparatus according to claim 10, further comprising a coolant temperature detecting device that detects a temperature of the engine coolant, wherein the circulation control device prohibits circulative flow of the engine coolant when the temperature of the engine coolant detected by the coolant temperature detecting device is equal to or higher than the boiling point of the solvent of the liquid reducing agent.

12. (Currently Amended) An engine exhaust emission purification apparatus comprising:

a reduction catalytic converter disposed in an engine exhaust system to reduce and purify nitrogen oxides by using a liquid reducing agent;

an injection nozzle that supplies by injection the liquid reducing agent to a flow of an exhaust emission upstream from the reduction catalytic converter;

a nozzle temperature detecting device for detecting a temperature of the nozzle of the injection nozzle;

a temperature maintenance device for maintaining a temperature of at least a part of a liquid reducing agent supply system including the injection nozzle and piping of the injection nozzle at a temperature lower than a boiling point of a solvent of the liquid reducing agent or

equal to or higher than a melting point of dissolved matter The engine exhaust emission purification apparatus according to claim 1,

wherein the temperature maintenance device comprises a heating device that heats at least a part of the liquid reducing agent supply system and a heating control device that controls the heating device, and

wherein the heating control device controls actuation of the heating device based on the temperature of the nozzle detected by the nozzle temperature detecting device.

13. (Original) The engine exhaust emission purification apparatus according to claim 12, wherein the heating device comprises a heater.

14. (Original) The engine exhaust emission purification apparatus according to claim 12, wherein a heat insulating member is disposed around at least a part of the liquid reducing agent supply system and the heating device.

15. (Cancelled)

16. (Original) The engine exhaust emission purification apparatus according to claim 12, wherein the heating control device heats at least a part of the liquid reducing agent supply system to a temperature equal to or higher than the melting point of the dissolved matter of the liquid reducing agent by using the heating device when the injection-supply of the liquid reducing agent is stopped.

17. (New) The engine exhaust emission purification apparatus according to claim 8, wherein the temperature maintenance device comprises a heat insulating member disposed between the exhaust system and the flange for attaching the injection nozzle to the exhaust system.

18. (New) The engine exhaust emission purification apparatus according to claim 8, wherein the temperature maintenance device comprises radiating fins provided to be juxtaposed to the flange for attaching the injection nozzle to the exhaust system.